

**In the United States Patent and Trademark Office**

Application No.: 09/915,232  
Filed: 07/24/2001  
Title: MEMS Element Having Perpendicular Portion Formed From A Substrate  
Applicant(s): Chuang-Chia Lin  
Examiner: Not yet assigned  
Art Unit: 2817

Mailed 9/26/2001  
Fremont, CA

**Information Disclosure Statement**

Commissioner of Patents and Trademarks  
Washington, District of Columbia 20231

Dear Sir or Madam:

Attached is a completed Form PTO-1449 and copies of the pertinent parts of the references cited thereon. It is requested that the document(s) on the enclosed form be made of record. As provided for by 37 CFR 1.97(g) and (h), no inference should be made that the information and references cited are prior art merely because they are in this statement and no representation is being made that a search has been conducted or that this statement encompasses all the possible relevant information.

**Part I (Authority)**

This statement is filed pursuant to:

☒ 37 C.F.R. § 1.97(b).

This information disclosure statement is filed either (1) within three months of the filing date of the national applications; (2) within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application; or (3) before the mailing date of a first office action on the merits, whichever event occurs last.

Accordingly, this information disclosure statement requires no fee and no certification.

☐ 37 C.F.R. § 1.97(c).

This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(b), but before the mailing date of either (1) a final action under 37 C.F.R. § 1.113 or (2) a notice of allowance under 37 C.F.R. § 1.311.

Accordingly, this information disclosure statement requires either the fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c) (\$240), or a certification according to 37 C.F.R. § 1.97(e).

☐ 37 C.F.R. § 1.97(d).

This information disclosure statement is filed after the period specified in 37 C.F.R. § 1.97(c).

Accordingly, this information disclosure statement requires the petition fee specified in 37 C.F.R. § 1.17(i)(1) to consider an information disclosure statement under 37 C.F.R. § 1.97(d) (\$130), a certification according to 37 C.F.R. § 1.97(e), and a petition requesting consideration of the information disclosure statement.

**Conditional Petition**

It is respectfully requested that this information disclosure statement be considered, good cause being presented in Part III herein (certification). Please treat this paper as the required petition.

If this statement crosses in the mail with an office action, or is otherwise not in the indicated category of 37 C.F.R. § 1.97, it is respectfully requested that this statement be treated in the next appropriate category and made of record.

To the extent required, please treat this paper as a conditional petition for acceptance of the information disclosure statement.

### **Part II (Payment)**

A check is enclosed as indicated:

- ☒ ( X ) No fee is due.
- ☐ ( ) The fee specified in 37 C.F.R. § 1.17(p) for submission of an information disclosure statement under 37 C.F.R. § 1.97(c) is enclosed (\$240).
- ☐ ( ) The petition fee specified in 37 C.F.R. § 1.17(i)(1) to consider an information disclosure statement under 37 C.F.R. § 1.97(d) is enclosed (\$130).

### **Part III (Certification)**

Pursuant to 37 C.F.R. § 1.97(e), I certify:

- ☒ ( X ) No certification is necessary.
- ☐ ( ) (1) Each item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the statement.
  - ☐ ( ) The "communication from a foreign patent office" referred to in the certification is an International Search Report, possibly issued by the U.S. Patent and Trademark Office in its capacity as an International Search Authority or International Preliminary Examining Authority.
  - ☐ ( ) The "counterpart foreign application" referred to in the certification corresponds to an ancestor or descendent application of the application for which this information disclosure statement is filed.
- ☐ ( ) (2) No item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, or, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c), more than three months prior to the filing of the statement.

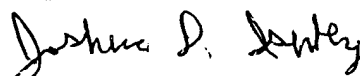
### **Part IV (Additional Statement)**

An additional statement regarding these items of information (X) is, ( ) is not, enclosed.

Copies of the cited art ( X ) are enclosed, ( ) are of record in parent application Serial No. \_\_\_\_\_ and will be provided if the Examiner deems it convenient.

Dated: 9/26/2001

Respectfully submitted,



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FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE										AGENT DOCKET NO.: ONX-118		SERIAL NO. 09/915,232			
LIST OF PRIOR ART CITED BY APPLICANT (Use several sheets if necessary)										APPLICANT Chuang-Chia Lin					
										FILING DATE 07/24/2001		GROUP 2817			
U.S. PATENT DOCUMENTS															
EXAMINE R INITIAL		DOCUMENT NUMBER								DATE	NAME	CLASS	SUB- CLASS	FILING DATE IF APPROPRIATE	
	A	5	6	4	5	6	8	4	7/8/97	Keller	156	643.1	6/7/1995		
	B	5	7	1	7	6	3	1	2/10/98	Carley et al.	365	174	6/25/1995		
	C	5	9	0	8	7	1	9	6/1/99	Guckel et al.	430	5	9/11/1998		
	D	5	9	7	1	3	5	5	10/26/99	Biegelsen et al.	251	129.06	11/27/1996		
	E	5	9	4	9	5	7	1	9/7/99	Goossen et al.	359	291	7/30/1998		
	F	5	9	4	3	1	5	5	8/24/99	Goossen	359	247	8/12/1998		
	G	5	8	6	6	2	8	1	2/2/99	Guckel et al.	430	22	11/27/1996		
	H	5	6	3	8	9	4	6	6/17/97	Zavracky	200	181	1/11/1996		
	I	5	6	3	7	5	3	9	6/10/97	Hofmann et al.	438	20	1/16/1996		
	J	5	3	2	7	0	3	3	7/5/94	Guckel et al.	310	40	12/30/1992		
	K	5	2	0	6	9	8	3	5/4/93	Guckel et al.	29	598	5/24/1991		
	L	5	0	4	3	0	4	3	8/27/91	Howe et al.	21	306	6/22/1990		
	M	5	9	1	4	5	0	7	6/22/99	Polla et al.	257	254	10/30/1996		
	N	6	0	2	5	9	5	1	2/15/00	Swart et al.	359	245	11/27/1996		
	O	5	3	1	4	5	7	2	5/24/94	Core et al.	156	643	4/22/1992		
	P	6	2	0	3	7	1	5	3/20/01	Kim et al.	216	24	1/19/1999		
	Q	6	0	2	1	6	7	5	2/8/2000	Sefeldt et al.	73	777	2/28/1997		
	R	5	5	7	6	2	5	0	11/19/1996	Diem et al.	437	228	12/27/1993		
	S	5	7	8	0	8	8	5	7/14/1998	Diem et al.	257	254	8/15/1996		
	T	5	6	2	9	9	1	8	5/13/1997	Ho et al.	369	112	1/20/1995		
FOREIGN PATENT DOCUMENTS															
		DOCUMENT NUMBER								DATE	COUNTRY	CLASS	SUBCLA SS	TRANSLATION	
														YES	NO
	U	1	0	3	3	6	0	1	6/9/2000	Europe	G02B	26/02		X	
	V	2	3	2	1	7	8	0	8/5/1998	Great Britain	H01L	37/02		X	
	W	0	6	0	5	3	0	0	7/6/1994	Europe	G01P	15/08		X	
	X	0	9	4	2	4	6	2	9/15/1999	Europe	H01L	21/311		X	
	Y	1	1	2	0	6	7	7	8/1/2001	Europe	G02B	26/02		X	
	Z	0	0	5	7	2	3	3	9/28/2000	WIPO	G02B	26/00		X	

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)		
	AA	Yao et al., "Single Crystal Silicon Supported Thin Film Micro Mirrors for Optical Applications" Opt. Eng. 36(5) 1408-1413 (May 1997)
	AB	Conant et al. "A Flat High Frequency Scanning Micromirror" Abstract Submitted to Hilton Head 2000.
	AC	Storment et al. "Flexible Dry Release Process for Aluminum Electrostatic Actuators" Journal of Microelectromechanical System Vol. 3 No. 3 Sept 1994
	AD	Mita et al., "An Out-of-Plane Polysilicon Actuator With a Smooth Vertical Mirror for Optical Fiber Switch Application"
	AE	Marxer et al. "Vertical Mirrors Fabricated by Deep Reactive Ion Etching For Fiber-Optic Switching Applications" Journal of Microelectromechanical Systems, Vol. 6 No. 3, Sept 1997
	AF	Fedder, G.K., "integrated microelectromechanical systems in conventional CMOS", Proceedings of 1997 IEEE International Symposium on Circuits and Systems. Circuits and Systems in the Information Age. ISCAS '97 (Cat. No. 97CH35987), pages 2821-2824, vol. 4
	AG	Provisional Patent Application of Behrang Behin et al., "Global Mechanical Stop for Precise Positioning of a Field of Mirrors", filed March 9, 1999
	AH	L. Y. Lin, et al, "Free Space Micromachined Optical Switches with Submillisecond Switching Time for Large-Scale Optical Crossconnects, IEEE Photonics Technology Letters, Vol 10, No. 4, April 1998
	AI	US Patent Application Ser. No. 09/489,264 of Robert L. Wood et al, "MEMS Optical Cross-Connect Switch", filed Jan. 20, 2000
<b>EXAMINER</b>		<b>DATE CONSIDERED</b>
<p>* <b>EXAMINER:</b> Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.</p>		

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 09/915,232  
Agent's Docket No.: ONX-118  
Filed: 07/24/2001  
Title: "MEMS Element Having Perpendicular Portion Formed From A Substrate"  
Applicant: Chuang-Chia Lin  
Examiner: not yet assigned  
Art Unit: 2817

<b>CERTIFICATE OF MAILING BY "EXPRESS MAIL"</b>	
I hereby certify that I am mailing this correspondence on the date indicated below to the ASSISTANT COMMISSIONER FOR PATENTS, WASHINGTON, DC 20231 using the "Express Mail Post Office to Addressee" service of the United States Postal Service under 37 CFR 1.10.	
<u>Biing Li</u> SIGNATURE	DATE OF MAILING 4/26/2001
<u>Biing Li</u> NAME OF PERSON SIGNING	EXPRESS MAIL LABEL NO: EF 063344033 US

ADDITIONAL STATEMENT REGARDING INFORMATION DISCLOSURE  
STATEMENT

Commissioner of Patents and Trademarks  
Washington, DC 20231

Dear Sir:

The attached Information Disclosure Statement includes a reference, European Patent Application 0605300A1 that is not in the English language. Although no translation has been provided, the Applicants have submitted two US Patents, Nos. 5,576,250 and 5,780,885 that claim priority from the same French application (FR 92 15771) from which 0605300A1 claims priority. The Applicant notes that all three submitted references contain the same drawings and are therefore believed to be substantially cumulative of each other. As such, the applicant submits that no translation is necessary for European Patent Application 0605300A1.

Very respectfully,

Joshua D. Isenberg  
Joshua D. Isenberg,  
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